SECTION 314 - CONTROLLED LOW STRENGTH MATERIAL (CLSM)
FOR UTILITIES AND STRUCTURES

314.01 Description. This section describes furnishing and placing CLSM as self-compacted backfill material in utility trenches and other works in lieu of compacted fill, or where indicated in the contract documents or accepted by the Engineer.

314.02 Materials.

Portland Cement 701.01
Fine Aggregate for Concrete 703.01
Water 712.01

Aggregates that are different than those specified in Subsection 703.01 - Fine Aggregate for Concrete may be used, subject to acceptance by the Engineer.

CLSM shall include mixture of portland cement, aggregate, and water. Provide flowable CLSM with aggregate in suspension. Proportion CLSM to produce the following:

(A) Backfill material that is self-compacting and able to be excavated, in the future, with conventional excavation equipment.

(B) Uniform, flowable mixture that is self-leveling when placed.

(C) 28-day compressive strength between 50 psi to 150 psi.

Provide CLSM conforming to Section 601 – Structural Concrete except as modified in this section.

314.03 Construction.

(A) Placement. Check trench sides and bottom for cracks, voids, or other defects that may cause CLSM to escape trench. Plug or repair as necessary. Do not place CLSM until the Engineer has been notified and has been given an opportunity to inspect trench in accordance with Subsection 105.11 - Inspection of the Work and Materials.

Secure pipes and culverts within backfill area with straps, soil anchors, or other means to restrain pipes and culverts at grades indicated in the contract documents. Submit proposed restraint method.

Seal conduits as necessary to prevent CLSM from flowing into conduits.
Place CLSM by chutes or pumps. Place CLSM around manholes and in utility trenches in a manner to prevent floating conduits due to fluid pressure from CLSM.

Place CLSM to fill line indicated in the contract documents, without vibration or other means of compaction. Provide sufficient supply to allow CLSM lifts to be placed without interruption.

In pavement trenches, limit fill so top of CLSM will not be higher than bottom of aggregate base course or drainage layer. Fill voids completely with CLSM during backfill operation.

Backfill trench in accordance with Section 204 - Excavation and Backfill for Miscellaneous Facilities, Section 205 - Excavation and Backfill for Bridge and Retaining Structures, or Section 206 - Excavation and Backfill for Drainage Facilities, no earlier than eight hours after placing CLSM, unless otherwise accepted by the Engineer.

If aggregate base course or drainage layer exists, reconstruct aggregate base course or drainage layer in accordance with Section 304 - Aggregate Base Course, Section 306 - Untreated Permeable Base Course, Section 313 - Permeable Separator, and the contract documents.

Protect CLSM and backfill material from traffic during period before restoration of pavement section.

Application of curing compounds or curing methods to CLSM will not be required.

**B** Acceptance. Submit manufacturer’s certification of CLSM and include unconfined 28-day compressive strength test data for each mixture used. Test data shall be current, having been obtained within one year of proposed use.

314.04 Measurement. The Engineer will not measure CLSM for payment.

314.05 Payment. The Engineer will not pay for CLSM separately and will consider the cost for CLSM as included in the contract prices of Section 204 - Excavation and Backfill for Miscellaneous Facilities, Section 205 - Excavation and Backfill for Bridges and Retaining Structures, or Section 206 - Excavation and Backfill for Drainage Facilities, or combination thereof. The cost is for the work prescribed in this section and the contract documents.

END OF SECTION 314